

## Abstracts

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tensive patients is a cost effective method of preventing stroke and myocardial infarction (MI) among patients not taking diuretics. **METHODS:** A decision analytic model was developed to compare the costs of antihypertensive therapy, stroke, and MI for patients screened for the a-adducin gene variant versus those not screened (standard care). The outcomes possible for each group were: no event, stroke, or MI. Epidemiological data for the risk of stroke, MI and the effect of the a-adducin gene variant were obtained from the literature. We assumed patients in the standard care group continued on their current anti-hypertensive regimen. In the screened patient group, we assumed 90% with the a-adducin gene variant switched to a diuretic, whereas those with the wild-type a-adducin gene continued their current regimen. Cost data were obtained from the literature, and the cost of the screening test was estimated based on currently available commercial tests for other gene variants. The analysis was conducted in 2003 dollars from the payer perspective. One-way sensitivity analyses were performed to test the robustness of the results. **RESULTS:** The screening strategy saved \$1427 and increased Quality of Adjusted Life Years (QALY) by 0.10. When the screening test was assumed to cost \$2000, the incremental cost increased to \$6600/QALY. When only 10% of patients were assumed to have switched to diuretics based on their screen result the incremental cost effectiveness ratio increased to \$56,317/QALY. **CONCLUSIONS:** The results of this cost effectiveness analysis suggest that under most circumstances, screening patients on antihypertensive therapy for the a-adducin gene variant is a cost saving or cost effective strategy.

## SESSION III

## PRESCRIBING STUDIES

RXI

## CLAIM-BASED DRUG WASTAGE ESTIMATION: HOW HIDDEN REFILL BEHAVIOR CAN HELP

Xiao Q, Marks AS

Caremark Inc, Northbrook, IL, USA

**OBJECTIVES:** Dispensing large quantities of maintenance drugs often causes concern of wastage due to patients changing medication types. This study examines the prescription claims related to patients changing medications, and establishes a new method to estimate drug wastage and explores its implications on drug dispensing policies. **METHODS:** The prescription claims of new patients of three drug classes (statins, SSRIs and PPIs) in 2002 were extracted from Caremark's prescription claim database. Drug changes were identified and wasted days of supply were calculated using the overlapped days between the new script fill date and the old script due date. The distributions of the wasted days of the three drug classes in 90-day-supply refills at mail and 30-day-supply refills at retail were analyzed. Based on the findings, a separation process was developed to estimate average wastage using clustering methods. **RESULTS:** The distributions of the wasted days appeared to be bimodal. One component of the bimodal distributions was consistent with overlapping pattern of non-changing drug refilling patterns. The wastage population identified two separate behavioral groups: refill-change people who change medications when their current medications are due to refill, and early-change people who change medications even though they still have significant amount of existing medications. Refill-change people were not likely to waste medications. The new wastage rates were 0.4% in 90-day supply and 0.2% in 30-day supply for statins, 0.2% in 90-day supply and 0.5% 30-day supply for SSRIs and 1.2% in 90-day supply and 0.9% in 30-day supply for PPIs. **CONCLU-**

**SIONS:** This study discovered a bimodal pattern in wastage. A portion of the wastage implies hidden refill pattern. Based on these findings, this study establishes a new way to estimate prescription drug wastage using claim data and shows that dispensing large quantities does not necessarily lead to higher wastage of medications.

RX2

## PREVALENCE AND CORRELATES OF POTENTIALLY INAPPROPRIATE PRESCRIBING AMONG THE AMBULATORY ELDERLY IN 2001

Viswanathan H, Bharmal M, Thomas III J

Purdue University, West Lafayette, IN, USA

**OBJECTIVES:** The study objectives were to determine the prevalence and correlates of potentially inappropriate prescribing among the ambulatory elderly using 2003 Beers criteria. **METHODS:** Retrospective analysis was conducted of the 2001 public use files of the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey. A total of 7243 visits by individuals over 64 years old with at least one prescription were analyzed. The 2003 Beers criteria were used to define potentially inappropriate medications irrespective of disease, dose, and duration. Multivariate logistic regression using generalized estimating equations was performed to examine associations between age, gender, race, payment source, reason for visit, referral status, sharing of care by other physicians, number of medications, ambulatory setting type, metropolitan location of practice, and geographic region with potentially inappropriate prescribing. Data was analyzed using SAS 8.2 and SUDAAN 8.02. An alpha of 0.05 was required for significance. **RESULTS:** Potentially inappropriate medications were prescribed in 17.8 million office-based ambulatory visits and 930,211 hospital-based ambulatory visits, 11.9% of all ambulatory visits made by the elderly. The most common drug classes were narcotic analgesics, antihistamines, and antiarrhythmic agents. Among all variables examined, location of practice, referral status, and number of medications were associated with receipt of a potentially inappropriate medication. After adjusting for other risk factors, visits made in metropolitan areas or by referred patients were more than twice as likely to involve a potentially inappropriate medication. In addition, compared with patients taking one medication, those taking two (Odds Ratio (OR) = 2.64, 95% CI = 1.41–4.95), three (OR = 6.85, 95% CI = 3.15–14.88), or four or more medications (OR = 7.43, 95% CI = 4.36–12.67) were more likely to receive a potentially inappropriate medication. **CONCLUSIONS:** Potentially inappropriate prescriptions were prevalent in nearly 12% of ambulatory visits made by the elderly in 2001. More prospective efforts to improve prescribing practices and prevent drug-related problems among the elderly are needed.

RX3

## EVALUATING CLINICAL AND FINANCIAL OUTCOMES ASSOCIATED WITH A RETROSPECTIVE DRUG UTILIZATION REVIEW PROGRAM

Lee KY, Zajack L, Berdovich S, Bertram C, Bundeck N

Walgreens Health Initiatives, Deerfield, IL, USA

**OBJECTIVES:** Retrospective Drug Utilization Review (RDUR) can be effective in reducing drug-related problems and adverse health outcomes. This study examined whether RDUR intervention letters to prescribers impacted the recurrence of drug-prescribing programs (exceptions) and evaluated the subsequent effect on utilization of health care services. **METHODS:** Data used were from combined pharmacy and medical claims from January 2002 through November 2003. To assess the impact of